

THE BENHS EXPEDITION TO BELIZE, JANUARY–FEBRUARY 1996

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The BENHS expedition to Belize (proposed in *Br. J. Ent. Nat. Hist.* **8**: 72) departed from Britain on 18 January 1996 with the following aims.

(i) To begin an investigation of the Lepidoptera, particularly the macro-moths, of Belize (formerly British Honduras) in Central America, by commencing inventories for sites and establishing habitat associations in different types of forest and cultivated areas where the owners are interested in management for nature conservation.

(ii) To raise the profile of Belizean Lepidoptera and conservation issues.

(iii) To provide BENHS members with an opportunity to contribute to the study and conservation of wildlife in Belize and gain experience of the neotropics.

(iv) To establish contacts with landowners and conservation organizations and to investigate potential bases for future expeditions so that the BENHS can continue to contribute skills and expertise.

(v) To raise the profile of the BENHS and demonstrate our concern for the conservation of invertebrates in the tropics.

We are delighted to report that the expedition has been successful in fulfilling all its objectives. A workshop on the planning of this and other expeditions and on our results and future plans will be held at Dinton Pastures on 14 December 1996. The purpose of this note is simply to provide a brief overview of what took place on the expedition.

The expedition comprised three men (the authors—PW, AS & GC) plus all our equipment, making a comfortable car-load. The main part of the expedition consisted of two weeks spent at “Tamandua” nature reserve and organic fruit farm situated in the centre of Belize, south-east of the village of St Margarets, along a track from Over-The-Top on the Hummingbird Highway, adjacent to the Five Blue Lakes National Park and about 17 miles south-east of Belmopan, the new capital city of Belize.

Tamandua is owned and managed by Janet and Bernard Dempsey. The site name comes from the scientific name for the Lesser Anteater *Tamandua mexicana*, which still occurs in the area. Janet and Bernard own 170 acres which consist of a smallholding surrounded by the majestic limestone outcrops of the foothills of the Mayan Mountains. The annual rainfall varies from 80 to 120 inches per annum and the whole area was formerly covered by tropical moist broadleaved forest. Much of this “jungle” currently survives on the steeper slopes and in the valleys remote from roads, as at Tamandua. However, along the main roads, including plots near to Tamandua, the accessible forest has been or is being cleared rapidly for intensive growing of citrus crops, particularly oranges, grapefruit and limes. This is being practised on a large scale, using a regime of chemical herbicides and insecticides. All woody plants are cleared from the orchard area and herbaceous plants around the base of the trees are sprayed out. Consequently, the jungle components and humid micro-climate are completely lost from the farmed area. The only exception is along the edge of watercourses where government regulations require that a border of woody vegetation is retained to protect the banks from erosion. Unfortunately, not all landowners comply.

In contrast to their near neighbours, the Dempseys are experimenting with less intensive organic methods on their farm, to grow a greater variety of fruit and

vegetables in a more sustainable and less environmentally damaging way than elsewhere in this region. They have retained belts of jungle along watercourses and across the farmed area to act as refuges and corridors for wildlife and are retaining the surrounding forest as an attraction for tourists interested in viewing animal and plant life. They have built three comfortable thatched "cabanas" with beds and washing facilities and offer full board including three-course evening meals of Janet's first-class home cooking. As with a number of other ventures in Belize, the intention is that the increasing interest in wildlife tourism will help produce a revenue from the forest without destroying it.

Janet and Bernard kindly offered the expedition special rates in return for helping them to find out which butterflies and moths occur on their property and the impact and benefits of their land management methods. To do this we operated four low bulk, high volume actinic light traps simultaneously from before dusk till after dawn on a total of nine nights at Tamandua. Two of the light traps were set up within the forest and two on the edge of the orchards, by wildlife corridors, to compare and contrast the catches. Figure 1 shows one of these traps, which were operated from



Fig. 1. Actinic trap.

12 V car batteries recharged after every three nights of use. The light traps were supplemented by four bait traps (Fig. 2) operated day and night throughout our time at Tamandua, two in the forest and two by the wildlife corridors, attracting both butterflies and moths. In addition, hand-netting of butterflies in both habitats was carried out on several days. Occasionally, it was possible to run a blended 160 W mercury vapour bulb in front of a sheet to supplement the insects recorded by other means.

The results of our work will be presented in subsequent articles, once the specimens have been identified and the data analysed.

A variety of other wildlife was also recorded. GC made a small collection of dragonflies (Odonata) and AS studied the behaviour of the Ithomiid butterflies. Mammals seen included the four-eyed possum *P. possum*, coati *Nasua narica* and kinkajou *Potos flavus*. Snakes included the fer-de-lance *Bothrops asper*, spotted rat-snake *Spilotes pullatus mexicanus* and the black water-snake *Tretanorhinus nigroluteus*. A large number of birds were seen, including the keel-billed toucan *Ramphastos sulfuratus*, collared aracari *Pteroglossus torquatus* and mealy parrots *Amazona farinosa guatemalae*. Whip-scorpions (amblypygids) and bats were observed in a cave in the limestone outcrops above the farm.



Fig. 2. Bait trap.

We were able to assist the members of another expedition from Britain by loaning them our light-traps and bait-traps when we departed for the UK so that one of their number, Philip Gould, an AES member of some years, could collect moths over a four-week period after we had left. Philip was the entomological member of the Five Blues expedition, a four-person private expedition of recent graduates from Southampton University who also studied the birds and bats.

It will be fascinating and necessary to return to Tamandua to collect at other times of the year, to extend the coverage of the Lepidoptera at this interesting site.

Also with a view to setting up further expeditions, PW stayed on in Belize for two weeks after GC and AS returned to the UK with the specimens collected at Tamandua. During this time contacts were developed and logistics explored at three potential bases for subsequent BENHS expeditions. These are as follows.

(i) The Programme for Belize Research Centre in the Rio Bravo Special Conservation Area in the north of Belize, near Blue Creek Village. This offers the opportunity to investigate a variety of forest types in a lower rainfall area, with on-site accommodation, catering and other facilities supplied. The Centre is visited by a range of other people with natural history interests and we could assist with demonstrations of light-trapping and slide presentations on the interest and value of Lepidoptera and other invertebrates. During this visit an impromptu display of mercury vapour light-trapping was provided for a visiting group of wildlife enthusiasts from the USA.

(ii) The Fallen Stones Butterfly Ranch near the Mayan ruins of Lubaantun in the south of Belize. The Ranch is concerned with the captive breeding of various species of butterfly for exhibition in the butterfly houses of Europe, where they act as ambassadors to raise awareness and interest in tropical Lepidoptera and their threatened habitats. The Ranch provides employment and interest for local people and is also involved in conserving and creating butterfly-rich habitat and providing facilities for tourists to come and visit.

(iii) The Seven Hills area of coastal mangrove swamp and forest, 20 minutes by boat from Punta Gorda in the south. This area is being investigated as a potential nature reserve and the various zones of vegetation are already being mapped and studied. Any useful data on the Lepidoptera and other invertebrates will be greatly welcomed. The Belize Centre for Environmental Studies (BCES) arranged my visit, which was hosted by John Spang, Tanya Russ and family who own part of the area and provided generous hospitality, accommodation and the use of a generator. The BCES already organize events for local communities, including schoolchildren, and would be delighted to have participation from the BENHS.

As at Tamandua, all three of the above bases were extremely keen to host BENHS expeditions in appreciation of the useful survey results we can produce, and all offered very favourable rates to encourage us. Light traps were operated on all nights at each base to demonstrate the techniques and provide some data as a result of these initial visits.

It is clear from this first expedition to Belize, and the contacts made, that the country has a great deal to offer the entomologist and that the results of entomological survey work will be useful in helping to develop effective conservation measures to the benefit of people and wildlife. It is also worth mentioning that at the time of this visit the national postage stamps were featuring a range of Belizean insects from several orders, which must surely be helpful in drawing attention to the diversity of the local invertebrates. On the negative side, Malaysian forestry companies have recently obtained licences for logging some of the remaining climax rainforest in the south of the country. This is causing great concern among the

Belizean conservation non-government organizations and the local Mayan communities who are fearful of the effects the logging may have on the environment, the roads, the water supplies and the local wildlife, particularly in view of the poor track record of these companies elsewhere in the world. In addition, we saw the forests in



Fig. 3. G. Collins and A. Spalding at Tamandua.



Fig. 4. P. Waring securing a Saturniid.



Fig. 5. Cabin at Tamandua.

the north of Belize being cleared for agriculture right up to the boundaries of the areas owned and protected by Programme for Belize. There can be no stronger testimony to the value of the work of Programme for Belize.

Our expedition was successful in its aims and also extremely enjoyable, without any illness or mishaps. It is hoped that further expeditions can be planned. The current proposal is for visits of two weeks duration, taking in two of the above bases; the Society to assist with administration and entomological equipment. Participating members would need to find the costs of their air fares, insurance and basic subsistence. Members who would like to be considered for an expedition in 1997 are invited to advise the Field Meetings Secretary, Dr Paul Waring, 1366 Lincoln Road, Werrington, Peterborough PE4 6LS.

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Mr and Mrs Collins for allowing us to use their home in Croydon as a meeting-up point and base from which to launch the expedition;

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Janet and Bernard Dempsey of "Tamandua", St Margarets, for hosting the major part of the expedition and providing excellent food, accommodation and company, for obtaining four 12V car batteries on our behalf and for the detailed correspondence involving in setting up the expedition;

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BOOK REVIEWS

Alien empire by Christopher O'Toole. BBC Books, 1995, 224 pp, hardback, £17.99.—You have watched the television series, now read the book. Covering the same themes as the BBC series, the book looks at the diverse structure of insects, how they perceive their world, insect flight and walking, feeding strategies, camouflage and protection against would-be predators, mating and reproduction, social behaviour, and the relationship between insects and Man. Using the world's insect fauna as examples, the book makes a good case for showing some respect to animals that most people regard as pests, or at best as animals of little consequence. Any human inventions, from chastity belts to microcomputers, are it seems already in use in the insect world. The book is illustrated throughout with colour photographs, which tend to be of some of the more spectacularly coloured species, rather than the small drab types that make up most of the world's insect fauna. Disappointingly the book does not have an illustration of the frustrated Australian jewel beetles attempting to copulate with a certain design of beer bottle that triggers their mating instincts!

The text is full of facts to show why the class Insecta has been so successful in occupying almost every conceivable habitat. It is also useful propaganda in favour of insects, showing their essential role in food chains, as pollinators, as recyclers of dead animals and plant material, and as predators and parasitoids of insects and other invertebrates that might damage cultivated plants. It will be interesting to see if this book, or more realistically the television series, does have any impact on the way the general public regards insects.